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AUTHOR Chandler, Theodore A.; Patterson, Richard G.
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ABSTRACT

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Likert vs. Yes-No Response Modality in
Locus of Control Measurement

THEODORE A. CHANDLER
Kent State University

RICHARD G. PATTERSON
Kent State University

Abstract

This study demonstrated the efficacy of a Likert format in contrast to two choice format in eliciting a more normal distribution of internal-external locus of control responses in a highly variable lower class university sample. The revised Likert format, in contrast to the original, collaborated other research evidence suggesting a multi-factor scale. Significant mean reversals across test formats, in spite of test-retest reliability, suggest that response modality may be a significant variable.

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Theodore A. Chandler
400 Education Building
Kent State University
Kent, Ohio 44242

THEODORE A. CHANDLER
Kent State University
RICHARD G. PATTERSON
Kent State University

SUMMARY

Objective:

If every significant criticism (Gurin et al., 1969; Levenson, 1972; McDonald and Tseng, 1971; Nowicki and Duke, 1972; Reid and Ware, 1973) of the Rotter's (1966) internal-external locus of control scale for adults results in a new scale, then we may be encouraging an inefficient strategy in examining problems of measuring the construct. Perhaps a more systematic and efficient approach would involve manipulating only one variable, such as response modality, at a time and controlling all others to see if an existing scale, such as the Adult Nowicki-Strickland Internal-External (ANS-IE) Scale, could be significantly improved.

Perspective:

Forcing one artificially into only a yes or no format may reduce individual differences, fail to indicate the strength (or weakness) of a belief, introduce a systematic source of error, and coerce subjects into a response that they did not originally intend. According to Brehm's (1966; 1973) psychological reactance theory, any perceived threatened or loss of freedom motivationally arouses the individual to resist doing or taking what he/she originally intended. If a subject agrees with reservations but is forced to respond unequivocally with a yes or no, he/she may tend to avoid attending to the task by answering in a random fashion or refusing to answer. The hypothesis is that a revised Likert format for the ANS-IE Scale will significantly reduce a systematic source of error resulting from a yes-no response format in the original form.

Method:

Of an original sample of 390, 192 were randomly assigned to take the original form (yes-no format) first and the revised (Likert format) last. The remaining 198 were randomly

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assigned to take the revised form first and the original form last. Four alternative response categories were provided for the revised form: strongly agree, agree with reservations, disagree with reservations, strongly disagree. An interval of seven weeks elapsed from the administration of one form to the administration of the other.

Data Source:

The original sample consisted of 390 freshmen and sophomore introductory sociology class in a large mid-western state university with a nearly open admissions policy. Reliability data for the test forms were obtained from a similar (no significant differences) sample of 310 freshmen and sophomore introductory sociology students enrolled in a subsequent quarter in the same university.

Results and Conclusions:

Total externality score correlated .16 between revised and original forms, suggesting little or no convergent validity. Test-retest reliability for the revised form was as high as the original form. Of those items manifesting higher test-retest reliability, four times as many items were judged ambiguous (per inter-judge reliability below a reliability of 1.00) on the original form as on the revised. The revised form manifests a normal distribution of scores in contrast to skewness toward internality on the original form.

Mean reversals across test forms for the same subjects were greater for agreeing/disagreeing with reservations than for the strongly agree/disagree position; i.e., there were fewer extreme shifts than moderate shifts. More subjects shifted from externality to extreme internality than from internality to extreme externality.

An alpha factor analysis of the two test forms resulted in different factor structures. The original form yields a first factor which accounts for 29% (12% of total) of the common variance, while none of the remaining factors account for more than 7% of common variance. In contrast, the revised form shows a first factor that accounts for 15% (5% of total) of the common variance with the next four factors accounting for 8%, 9%, 7%, and 7%. Unlike the original form factor pattern, variance attributed to the first 15 factors decreases less rapidly, suggesting little evidence for a general factor on the revised form.

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Importance:

Suggests that a change in response modality, holding test content constant, elicits a different factorial structure and degree of ambiguity. Rather than changing basic content of scales to meet criticisms, this research suggests that we need to explore using different response modalities to meet individual differences. By implication, the authors are suggesting that locus of control scales should be empirically derived using scaling theory and criterion measures.